



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

STANDARDS OF SICKNESS INSURANCE. III

In the preceding chapter of this series all the necessary benefits of a comprehensive sickness-insurance system were discussed with some detail. Since insurance in the final analysis is but a mechanism of distribution, and not of itself productive, the income side of the ledger must at least balance with the expenditures. Yet nothing at all was said of the source of revenues out of which all these benefits were to be paid, and the services rendered. The plan, as developed until now, may invite the criticism that it is thoroughly utopian. Granted that all the benefits and services are desirable, so are a great many things. But are they also possible? Can the beneficiaries pay for all?

The technical defense to this criticism can easily be made. In all computations of insurance rates, the value of the benefits must be first ascertained. The computation for life-insurance premiums proceeds upon the assumption of a definite amount of insurance and the present value of this insurance payable at some unknown distant date, with due consideration to the effects of compound interest and mortality. It was therefore the logical procedure first to agree as to necessary benefits, before the discussion should turn to the question of cost. Nothing was included in those benefits which did not appear absolutely necessary for the health and efficiency of the present and future generations of wage-workers.

Nevertheless it must be admitted that the list of included benefits is comprehensive, and without making at this time any definite statements as to the probable cost, it appears more than likely that, taking these benefits together, it is higher than the wage-workers as a class can pay for. That supposition is strengthened by the fact that only a small proportion of the wage-workers have voluntarily provided themselves and their families with sickness insurance, and that those who have organized into mutual associations for that purpose seldom receive more than a small part of all the benefits included as necessary here. The dilemma can be met in

one way only: a considerable part of the cost must be shifted upon some other social group. Compulsory sickness insurance to be successful must be subsidized. If this term is objectionable, we may say that in view of the social importance of sickness insurance, society must be required to contribute to its cost.

In the matter of distribution of the cost there are found perhaps the most important differences between the various types of insurance here studied. Under the purely voluntary system almost the entire cost falls upon the insured workmen themselves. The word "almost" is used advisedly. Establishment funds (frequently known as aid or benefit societies) are a common form of voluntary sickness insurance. Few of them exist without any contributions from the employer, whether regulated by the very constitution of the funds, or in form of voluntary, charitable gifts. In those countries where voluntary insurance through mutual-aid societies has achieved a substantial degree of development (as, for instance, in France or Italy), honorary membership (limited to contributions without right to benefits) serves the same purpose. In France, there are nearly 500,000 honorary members in addition to the 3,000,000 participating members of approved mutual-aid societies, and the contributions of the honorary members constitute about 12 per cent of the total income.

Subsidized voluntary insurance introduces the element of a governmental subsidy, whether from the central or local government. In Denmark the state contributes one-fifth of the total annual dues, and in addition a per capita subsidy of 2 Kronen (53.6 cents) per member. As shown by the statistical data, these two grants together amount to about one-third of the total revenue of the sickness-insurance funds. The narrow limits of the benefits granted by the Danish system, seem to indicate that a higher subsidy might improve the social results materially.

All compulsory sickness-insurance systems (with the single exception of Roumania) carry, with the compulsion of the employees to insure, also the compulsion of the employers to contribute to the cost, though the amount of the employers' contribution is subject to variation. In Germany, as is well known, the employer contributes a sum equal to one-half of the employee's contribution,

or one-third of the total. The same is true of Austria, Russia, and some other countries. In the insurance systems of Hungary and Servia, employer and employee contribute equal amounts.

One of the important deviations of the British system from the German is the compulsory contribution from the public treasury, in addition to that of the employer. This is sometimes referred to as a distinctive feature added by Great Britain to the theory and practice of social insurance, but the claim is erroneous, not only because of the time-honored precedent of a state contribution in the voluntary system of Denmark, but also because of the inclusion of contributions both from the state and from the communal treasury in Norway's compulsory sickness-insurance law of 1909. (The proportions in Norway are: insured, 60 per cent, employer, 10, commune, 10, state, 20.)

The respective shares in the British law are so well known that it seems scarcely necessary to quote them: the insured pays 4*d.* (females, 3*d.*) per week, the employer 3*d.*, and the state, in a somewhat indirect way, 2*d.* In proportion to each other, the respective shares, in case of the male insured, are: employee, 44.5 per cent; employer, 33.3 per cent; the state, 22.2 per cent; in case of the female insured the proportions are 37.5 per cent, 37.5 per cent, and 25 per cent. There are numerous modifying conditions, some of which will be referred to presently.

The propriety of substantial contributions from both the employer and the state is therefore supported by the whole history of the European experience. This results from the very philosophy of the social-insurance movement. But it is quite certain that the effort to establish in this country either sort of contribution will call forth a variety of objections and protests: from the employers, who must resent the specific tax upon their industry, and from the taxpayers at large, who regard it as a new and uncalled-for burden. In the struggle for the introduction of sickness insurance the demand for such contributions must be based upon specific arguments.

Employer's contribution.—Why should the employers contribute? We may give a sevenfold answer to that question.

1. The employer's contribution is but a fiscal method of charging the industry (in the final incidence partly the product and

partly profits) with a part of the cost of insurance. Such charge is just, largely because it is needed in order to keep the benefits up to the necessary standards.

2. It is just, because the industry is responsible for a large share of the illness existing among the wage-workers. In a great many branches of industry partial responsibility for the disease is quite obvious. Even outside of such clear cases, the marked fluctuation of the sickness rate in dependence upon the industry is a strong indication of such causal connection. Since the justice of this argument is admitted in application to industrial accidents, it cannot logically be denied, at least within certain limits, in the case of illness.

3. The employer's contribution may be defended from the point of view of the probable, or even almost certain reaction upon the employer's profits, because of the obvious material gain to industry from improvement of health conditions which must result from an efficient system of sickness insurance.

4. In most European countries, a further justification may be found in the fact that the burden of care of industrial accidents for a certain limited period (e.g., 4 weeks in Austria, 10 in Hungary, 13 in Germany) is assumed by the sickness-insurance system. This argument must be used with caution because at best it explains only a smaller part of the employer's contribution. In Germany, for instance, only from 8 to 10 per cent of the expenditures of the sickness funds is required to meet this cost, while the employer's contribution equals 33.3 per cent. The proportion must be still smaller in Austria, where care is given by the sickness funds to cases of accidents for 4 weeks only, and in Hungary where the employer's contribution is 50 per cent, and accidents are cared for 10 weeks.

5. The employer's contribution may be justified as a modification of the minimum-wage principle. In calculations of the required minimum wage, some allowance must be (and usually is) made for expenses connected with an average amount of illness. Evidently such provision can be much more efficiently made through the mechanism of compulsory insurance. It is true that

as yet minimum-wage legislation in this country applies to women and children only, but whatever the constitutional difficulties, the principle is equally applicable to underpaid adult male workers as well. Wage-workers with an earning capacity considerably above the minimum naturally do not claim the protection of the minimum-wage legislation. This raises an interesting problem which will be discussed presently.

6. The compensation movement which has swept the country offers an additional argument for such a contribution. It was argued from the very beginning that by placing upon industry a direct financial responsibility for the occurrence of industrial accidents, a strong factor for prevention would be created. Though the history of compensation in this country is brief, the expectation has been fully realized. The "Safety First" movement is largely due to agitation in favor of compensation; progressive private employers vie with insurance-carriers of all types in developing the work of accident prevention. As to the results of this work statistical evidence is as yet lacking. But to doubt that such results must manifest themselves sooner or later, would be to admit that the alarming accident frequency of this country is inevitable and incurable—a conclusion no safety engineer would for a moment countenance.

7. Finally, the compulsory contribution is only an extension, over all employers, of an obligation which an increasing proportion of the progressive employers are recognizing voluntarily. Without such compulsion, society offers a constant premium upon failure to provide for the health and safety of the employees. The movement which has developed under the flag of consumers' leagues stands as a recognition of the necessity of compulsion—which it endeavors to apply by means of "direct action" as opposed to the "political action" of a sickness-insurance law.

State contribution.—The arguments in favor of a substantial contribution from public sources (whether the entire state or the individual commune) are even stronger.

1. The responsibility of the organized state for a considerable share of preventable sickness through failure to enforce or provide

satisfactory conditions of public hygiene is even clearer than that of any industry, because of the potential control over general sanitation, housing, industrial activity, and education.

2. Society has a direct interest and concern in improving the health conditions of the wage-worker and in assisting him to resist the attacks of illness, because the health conditions of all classes of the population must improve or deteriorate together. The justice of the state contributing to the care and support of the sick through hospitals, sanatoria, medical inspection, visiting-nurse service, etc., is so well recognized that it does not seem necessary to press this argument further. But these services are open to all classes of the population, while sickness insurance may seem to create a special class favoritism. The answer to this objection, however, is that while, theoretically, hospital service, etc., is intended for the entire population, in actual practice it is utilized largely by the same groups which would be brought under compulsory insurance, and that insurance contemplates the payment for these services out of the fund, whereas heretofore they were furnished gratis. The state's contribution to the cost of sickness insurance is therefore a more effective way of performing a service, the necessity for which has already been recognized.

Workman's contribution.—Having justified the contribution of the employer and the state, there still remains the question: Should the workman contribute? The question would seem to be quite preposterous. As we are dealing with an insurance system, the payment of the premium by the insured would seem to require no justification. Nevertheless, it is worth while to point out that the platform of the Socialist party (with a membership of some 150,000 and a voting strength of nearly a million and with many more sympathizers) demands a system of sickness insurance, as well as all other forms of social insurance, without any contribution from the workman. Similar demands were often made by many radical labor organizations in Europe. As moderate a pair of reformers as the Webbs have severely criticized the British national insurance system because it introduced a complex and cumbersome system of special taxation of the working-men for

the purpose of accomplishing something which could be more easily done by general taxation.

After all, precedents in support of this view are not altogether lacking. It is sometimes forgotten that one very important precedent is furnished by the entire practice of compensation, and analogies can easily be found. The whole cost of compensation is by common consent levied upon industry. The charge is accepted because industry is responsible for the majority of industrial accidents; but this is true, though not to the same extent, of a good deal of sickness among wage-workers. Of course, through his own actions entirely outside of the conditions of his employment, the wage-worker may bring illness upon himself. But even so, no one can deny that a great many industrial accidents may be traced to the carelessness of the employee. The difference is after all one of degree only.

Another important precedent is the system of non-contributory old-age pensions, accepted by a fairly large number of countries (Denmark, Great Britain, France, Austria, New Zealand), which entirely disregards the factor of causation and proceeds from consideration of need only. The same is true of the system of mothers' pensions which has developed recently in this country and to some extent in Europe. At least one country (France) has established a system of non-contributing maternity insurance. It cannot be argued, therefore, that a demand for sickness insurance without contributions from the insured is altogether chimerical, impractical, revolutionary, and what not.

There are, however, it seems to the writer, besides the certain refusal of the modern employer and modern state to agree to the cost of it, some sound considerations for discarding this plan which, for the present, remove it from the domain of practical politics.

Sickness insurance deals with temporary disabilities of otherwise economically self-supporting individuals. The cost of illness constitutes a part of the necessary "standards of life" which should influence the amount of wages. It is not at all necessary to place its entire cost upon general taxation which may again be shifted

upon the wage-worker. A non-contributory system of sickness benefits approaching outdoor poor relief, as do old-age and mothers' pensions, must establish a dead level of minimum benefits and does not permit of such extension and adjustment as a system of insurance can. Finally, the contribution of the wage-workers entitles them to a degree of democratic participation in the administration of the funds, such as would be quite impossible under a system of gratuitous pensions. The working class has amply demonstrated its ability and willingness to develop mutual insurance. A system of pensions which would destroy these expressions of mutual aid would be very much less desirable than a financial subsidy of such mutual insurance and its compulsory extension to wider circles. There are sound social reasons, therefore, in favor of contributory insurance entirely irrespective of the objections which employing or taxpaying capital might raise against carrying the entire burden.

Shares of the three parties.—The necessity of dividing the cost of sickness insurance among the insured workman, his employer, and the state (or society at large) may therefore be set down as "a standard," or a rule of action supported by certain definite considerations. It is somewhat more difficult to be dogmatic concerning the exact ratio of division of the total cost among these three factors. The usual mode of division in European acts has been indicated above. None of these (neither the German division of two-thirds and one-third, nor the Hungarian division into two equal parts, and not even the British formula of 4*d.*, 3*d.*, and 2*d.*) demonstrates the influence of any logical basis. The ratios are on customary rather than logical lines. An equal division of the cost suggests itself as the natural, because the easiest, way of solving the problem. In the very nature of things, the basis for any equitable distribution seems to be lacking. It is only because of the necessity of hitting upon a simple and fair rule that an equal division of the total cost among the employee, employer, and the state is here suggested.

Lacking a logical foundation, this rule may not deserve to be designated as a standard. The actual distribution will in each case depend more upon bargaining power and the interaction of

political influences than upon any definite economic or actuarial reasoning. The representatives of both the employers and employees will naturally strive to reduce the burden to be placed upon their respective constituents. The one rule which may be justified by the more progressive European acts is that the share of employer and employee should be equal, as would be the respective degrees of participation in the management of funds. Perhaps the hardest bargaining may take place in connection with the amount of governmental subsidy. Compromises may here be necessary, and in this connection do not appear very dangerous. So long as the principle of state participation in the cost is carried through, time, helped by the demonstration of the social value of the system, may be relied upon to make this contribution more liberal, if necessary.

Reduced contribution for low-paid labor.—The demand for entire freedom from participation in the cost, made by the radical wing of the labor movement, finds some justification in the fact that for a certain proportion of the wage-workers even the smallest contribution, in view of the low wage-scale, may present a serious hardship. As the cost of an effective sickness-insurance system must be substantial, this argument should not be lightly disposed of. Fortunately the British system (many features of which have been so peremptorily rejected in this study) presents in this connection a very interesting and valuable precedent, in establishing a sliding scale, which provides for a higher contribution from the employer, for persons of lower groups.

The actual contributions for the lower-wage group are shown in Table I. As percentages of the total these respective contributions are as given in Table II.

The combined share of the employer and the state, which represents the entire subsidy granted by the compulsory system, amounts to 55.5 per cent in case of men earning over 2s. 6d. per diem (about \$3.72 per week), and to 62.5 per cent in case of all women earning over 2s. per diem. It rises with the decrease of wages below these rather low limits until for all workers earning less than 36 cents a day, sickness insurance is furnished without any cost to them—or, in other words, the “thoroughly chimerical

and revolutionary demand" of Socialist platforms is altogether realized in staid and practical Great Britain.

If it is true that money wages on a whole are about twice as high in the United States as in England, the same should apply

TABLE I

WAGE GROUP (PER DIEM)	MALE WORKERS		
	Employee's Share	Employer's Share	State's Share
1. Over 2s. 6d. (normal)	4d.	3d.	2d.
2. Over 2s. but not over 2s. 6d. . . .	3d.	4d.	2d.
3. Over 1s. 6d. but not over 2s. . . .	1d.	5d.	3d.
4. Not over 1s. 6d. . . . .	.....	6d.	3d.
	FEMALE WORKERS		
1. Over 2s. 6d. (normal)	3d.	3d.	2d.
2. Over 2s. but not over 2s. 6d. . . .	3d.	3d.	2d.
3. Over 1s. 6d. but not over 2s. . . .	4d.	4d.	3d.
4. Not over 1s. 6d. . . . .	.....	5d.	3d.

TABLE II

Wage Group (per Diem)	MALE WORKERS		
	Employee's Share	Employer's Share	State's Share
1. Over 2s. 6d. (normal)	44.5	33.3	22.2
2. Over 2s. but not over 2s. 6d. . . .	33.3	44.5	22.2
3. Over 1s. 6d. but not over 2s. . . .	11.1	55.6	33.3
4. Not over 1s. 6d. . . . .	.....	66.7	33.3
	FEMALE WORKERS		
1. Over 2s. 6d. (normal)	37.5	37.5	25.0
2. Over 2s. but not over 2s. 6d. . . .	37.5	37.5	25.0
3. Over 1s. 6d. but not over 2s. . . .	12.5	50.0	37.5
4. Not over 1s. 6d. . . . .	.....	62.5	37.5

to all wage-workers receiving less than \$4.32 per week—perhaps not a large but still not an altogether negligible proportion of female and juvenile workers in the United States.

The principle established by this provision of the British act is an admission of the minimum-wage idea; it amounts to a definite policy to penalize industry for paying subnormal wages. At

least this is true of the additional contribution exacted from the employer. Much less logical and of lesser social value is the method of shifting part of the cost upon the state, unless considered as an admission of the general concern society must feel in that part of the working class which is paid these subnormal wages. But even the trace of the old poor-law method of subsidizing low wages, which may be discovered, is objectionable. It would be much more consistent to charge the employer for the entire difference.

Some such method of relieving the groups of lower earning capacity seems very desirable in American sickness-insurance laws. An exact schedule for accomplishing this purpose cannot be devised hurriedly, but, simply as a suggestion, the following schedule is offered. Leaving the state contribution, whatever it may be, undisturbed, the distribution of the cost between the employer and employee may be as shown in Table III.

TABLE III

	Employee's Share	Employer's Share
If weekly earnings are not under \$9.....	50 per cent	50 per cent
" " " " under \$9 but not under \$8..	40	60
" " " " " \$8 " " " \$7..	30	70
" " " " " \$7 " " " \$6..	20	80
" " " " " \$6 " " " \$5..	10	90
" " " " " \$5.....	.....	100

Amounts of contribution.—Having laid down certain definite rules as to the distribution of the entire contribution, we may consider what its exact amount shall be. Shall we endeavor to build up one uniform scale of contributions, such as only the British system, of all systems, possesses? The amount of contributions evidently depends upon the benefits and services which must be given. Since we have discarded the British system of uniform benefits (for reasons already discussed at sufficient length), it necessarily follows that uniform contributions for a varied scale of benefits would not at all be an equitable arrangement. The contributions evidently should bear some relation to wages, since benefits do. Yet all vexed problems are not yet solved by this decision. Shall the contributions then be stated in terms of a

percentage of wages, the same percentage for all wage groups? Since only the money benefits are adjusted to wages, but the entire medical service is not, actuarial justice would require a percentage of wages which is increasingly higher as the wages become lower.

It is well known that the rate of sickness increases with age. Shall rates be adjusted to this difference and rise from year to year, as would the cost of term life insurance, if taken out for a 1-year term only? Or shall it increase from one age group to another, by 5- or 10-year groups, as does the cost of term life insurance in actual practice? Or shall a level-premium system be adopted, familiar to Americans from life-insurance experience, where a uniform premium is guaranteed for the entire period of insurance, but varies with the age at which insurance is effected? This is the British system, though it does not appear quite readily on the surface, because, instead of the contributions increasing, the benefits are reduced for all persons entering insurance at an advanced age (except during a certain period of grace).

A still more important factor than age in causation of sickness is the industry or occupation. It seems unnecessary here to prove this contention. Shall this factor be disregarded, as was done in the British act, or taken cognizance of in establishing rates of contribution? Shall local differences be taken in consideration? It is well known that the general rate of sickness may be substantially influenced by climatic and general hygienic conditions. How far shall these differences be taken into consideration in computing rates? And embracing all these particular problems, there is one general problem—Shall the law contain any specific regulations as to the actual rates to be charged for the insurance furnished?

This question must necessarily arise because of the weight of the British precedent. A study of the history of the British insurance system, especially of its preparatory stages, emphasizes the prominent part taken by actuaries and their computations. The wealth of actuarial tables accompanying the "Reports on the Administration of the National Insurance Act," with their complex mathematical formulae, depresses and discourages the non-mathematical student. Not only do the general provisions of the act, such as the relation between the contributions exacted and

the benefits promised, depend upon these computations, but a great many minor features as well, such as those determining the reserve values which must be credited to societies for the admission of each member over sixteen years, those for calculating the rights of insured women at marriage, and so forth.

It would be unwise to tax the reader with actuarial computations at this place. But for the purpose of an intelligent decision as to necessary legislation about the rate of contributions, the essential actuarial problems underlying the organization of sickness insurance must be stated.

The entire science of life-insurance rates is based essentially upon two factors—an assumed table of mortality and the laws of compound interest. The conditions of the insurance contract are simple. The payment of the premium depends upon survivorship, the payment of the death benefit upon death. There are no different kinds of losses. There is of course a considerable difference between the rates of mortality of different occupations, and of different localities, but there is seldom any adjustment of premiums to these differences. An insurance company operates on a basis of a certain mortality table. Risks are either accepted or not accepted. The rates are conservative and safe, because the mortality assumed from the table exceeds the mortality which may be safely expected. In a mutual company the savings due the difference in mortality may be returned to the insured as dividends.

In comparison with life insurance, the problems presented by sickness insurance are extremely complex, if it is desired to apply the strict rules of actuarial science. This would be necessary if voluntary long-term contracts were made. The arrangement would not be safe unless there were a true balance between payments and the cost of benefit. The difficulties are statistical rather than actuarial, i.e., the mathematical rules are available to handle the underlying facts, but the information as to the facts is very scanty.

The benefits which must be paid under the system are numerous. Data as to frequency of sickness and non-industrial accidents, according to the age and occupation, would be necessary; also

the distribution of cases of sickness and resulting disability by duration of the case, according to both ages and occupation. The valuation of the maternity benefit requires data as to frequency of childbirth among the women of the wage-working class. The funeral benefit, no matter how small, raises all the technical problems of life insurance. Finally, the broad plans of medical and surgical aid, hospital care, and the supply of drugs and appliances raise many questions as to the amount of aid which will be necessary and its probable cost. Granted all this necessary information, it would be possible to compute a proper rate to be charged at each age of entry into insurance. But the plain truth is that for most of these problems such information is unavailable and may remain unavailable for a long time, and any actuarial computations made are likely to be very uncertain.

It is true that the work of the British National Insurance Committee gives the semblance of such accuracy and security. In the tables all data are carried out to the third decimal place. But as a matter of fact, this accuracy is illusory only. It was characteristic of life-insurance actuaries that, while punctilious care was taken of all age differences, occupational differences were disregarded. Were all the 14,000,000 British insured members of one large fund, this disregard of occupational differences might be inequitable, but would not disturb the actuarial soundness of the scheme. But since the thousands of approved societies are financially independent of each other, fluctuations in results between the societies must soon develop. In fact, it has already developed (as pointed out by the *New Statesman*¹) that the fluctuations of sickness frequency are so great as to promise substantial surpluses in some societies, and to threaten deficits and bankruptcy in others. While all the government calculations were based upon an actuarial estimate of 1 week's sickness per member per annum, during the very first six months of application of the act, 15 selected societies with a membership of 187,000 showed together an average sick rate of 1.06 weeks; but 7 male societies showed fluctuations in the sick rate from 0.68 weeks to 1.3 weeks, societies with mixed

¹ December 6, 1913.

membership from 0.85 to 1.74 weeks, and female societies from 0.58 to 3.15 weeks per member per annum. Of course triennial valuations, provided for in the law, furnish a means of correction by reducing the benefits, but this preservation of the solvency at the expense of the quality of service is not a very desirable situation. The point of view upon which the technical features of the British law are based, that the uniformity of contributions is more important than the uniformity and efficiency of the benefits and service, is an entirely erroneous one.

The organization proposed here (as outlined in the first instalment of this study) easily and automatically eliminates many of these problems. While full and ample reserves are necessary for a system of insurance based upon voluntary contracts, a compulsory system may consciously adopt an assessment system, under which the amount of funds to be raised annually by contribution is largely determined by the amounts of money to be paid out and expended annually. Since the distribution of the membership of any large insurance-carriers is not subject to any violent fluctuations, the amount necessary is not likely to change very much from year to year. The accumulation and investment of large reserves is altogether unnecessary. Insurance may be divorced from savings. When the system is thus simplified the true average cost may be ascertained in a comparatively short time. Fluctuations between funds may be looked upon with equanimity so long as they fall within certain reasonable limits, whether owing to differences in climatic conditions or to occupational distribution. It would be expected as a matter of course that a sick fund in a mining or quarrying community would require more money than a large insurance fund for clerical employees only.

The first important deduction to be derived from these observations is that it is quite unnecessary to embody any definite rate of contribution in the act. This may be safely left to the individual insurance-carriers to be established by their by-laws, subject to the control of the Commission. This is an important negative standard. In the few weak efforts at drafting sickness-insurance bills, the error has already been committed of introducing an

iron-clad rate of contribution, sometimes based upon very fanciful actuarial reasoning. It does not follow therefrom that the law may disregard the entire subject of rates of contribution. The general rules governing them may well be embodied in the act. We are now better prepared to reach definite conclusions in regard to the many questions asked above.

Uniform bases for computing rates.—Shall the contributions be at one uniform percentage rate for all wage groups? So far as ordinary sickness benefits are concerned, they are determined as ratios of wages, so that a uniform percentage rate is actuarially just. The cost of medical benefits, hospital care, surgical supplies, and even of funeral benefits, does not bear any proportion to wages. This cost being a constant numerator in the fraction ($\frac{\text{cost}}{\text{exposure}}$) of which the denominator is variable (because of wage variations), this cost per \$100.00 of wages will rise, as the wages decline. The lower-paid wage groups of workers will derive an advantage over the higher-wage groups—a situation which socially is much less objectionable than the reverse would be, since thus automatically, by establishing a simple rule of uniform percentage rates, we really obtain a progressive charge justified by ability to pay.

Simplicity is a great advantage in these complex acts of social legislation, which must be understood at least in their essential features in order to be popular. A straight percentage rate has the advantage of simplicity, especially so far as the employer is concerned, who can easily ascertain the total volume of his payroll, as he must for the purposes of compensation insurance. Moreover, not a small advantage is that this total can be easily and cheaply audited. So far as the contribution of the employee is concerned, the easiest way to collect that is to permit the employer to deduct it out of the contents of the pay envelope. Here for purposes of simplicity employees may be arranged into definite wage groups with a flat contribution for each wage group approximating the stated percentage on an average. For instance, let us assume that according to the by-laws of the local insurance fund, 3 per cent of the wages constitute the combined contributions of the employer and employee, $1\frac{1}{2}$ per cent representing the share of

each. This will mean 15 cents a week for the employee earning \$10.00 per week, and 18 cents for the one earning \$12.00. It would be manifestly easier to establish a rate of 16 cents for all earning \$10.00 or more but less than \$12.00 per week, than to compute the percentage separately for each pay envelope. The possible combinations are numerous. The act need not be lumbered up with them. But the rule may well be included that the funds may establish such wage groups for purposes of simplifying the computations of contributions, even if the mathematical accuracy of equal division between employer and employed is somewhat disturbed.

Age and rates of contribution.—The rate of sickness does increase with age. But since the ideal of true actuarial reserves has been dispensed with, this factor may be entirely disregarded. As already explained, the British contributions have been calculated at an assumed age of entry of sixteen. Since the introduction of the law finds persons at all ages, it was necessary to protect the financially independent societies by providing "reserve values" to compensate for the actuarial loss sustained through a person of higher age joining and paying contribution at the rate calculated for the age of sixteen. It is not universally recognized that, while the state assumes the cost of two-ninths of the benefits, the same proportion must be set aside for the purpose of building up the necessary reserve; that, therefore, the entire state contribution is virtually absorbed into such reserves, that this must go on for at least eighteen years, before the original deficit is met, and that for many years this state contribution is practically unavailable to the insured. Apologists of the actuarial complexities of the British system point to the advantages of building up these reserves, which by accumulating a compound interest will eventually save the British workman about 1*d.* a week, because "7*d.* paid in becomes 8*d.* paid out,"¹ but it does seem as if this penny was a scant compensation for eighteen years of skimping of benefits, which would not have been necessary, if the accumulation of reserves were abandoned, and the state contribution made immediately available. Since the average age contribution of a large

¹ Carr, Garnett, and Taylor, *National Insurance*, p. 99.

number of wage-workers will scarcely change from year to year, the uniform contribution for all ages will not embarrass the fund, and any tendency to misstate the age, or to discriminate against the aged, will be eliminated. Lengthening of the school age and general postponement of age of entry into industry may have a certain effect in the long run, but adjustment to all such long-range changes may easily be made when the time arrives.

Occupation and rates of contribution.—A more important problem is the effect of occupations upon the sickness rates. The problem has been so thoroughly discussed in connection with compensation insurance, that the justice of some adjustment will be immediately recognized. There is this important difference, however, that in compensation insurance the entire cost is borne by the employer, or the industry, and therefore the responsibility for the hazard is placed where it belongs; while in sickness insurance an equal part of the cost is placed upon the employee who in no sense is responsible for the excessive morbidity of his trade.

A compulsory provision for adjusting rates of contribution to the occupational morbidity may therefore call forth considerable protest and seem unwise. If a local insurance fund, democratically managed, is sufficiently imbued with the spirit of equality to establish one uniform rate of contribution for all trades, it would not seem to be wise to place unsurmountable obstacles in its way. On the other hand, such uniformity, if it were to be enforced by the law, might lead to some undesirable results. It might stimulate the tendency to formation of numerous trade funds among trades with lower rates of morbidity, so as to enable them to get all the advantages of lower rates of contribution, and thus interfere with the development of large and strong local funds, so necessary for the efficient administration of the medical benefits. Insurance-carriers must therefore be given permission to grade their rates of contribution according to rates of morbidity as shown by actual experience, such grading to be subject to the control of a central administrative body, which is in a position to make the necessary statistical and actuarial computations.

Excessive hazards.—A very potent argument for such grading is found in its preventive possibilities. Notwithstanding the short

period of compensation, in this country, it has become quite clear that the high rate of insurance may prove a powerful fulcrum for raising safety conditions. This is undoubtedly true of general health conditions as well. For this reason such grading is very desirable, especially in so far as it affects the income account of the employer. This may hold true of the individual employer or establishment even more than of an entire branch of industry. Schedule rating on fire insurance is intended to provide an individual motive for the improvement of the risk. For the same purpose a very comprehensive system of schedule and experience rating^{*} was introduced in compensation insurance. Schedule rating for general health conditions may not be a simple problem, though it does not appear at all impossible. But some method of penalizing extra unsanitary conditions resulting in excessive illness appears very desirable, for the sake of the preventive effect.

Both the German and British acts contain provisions to that effect. According to the new German act, a specially high rate may be ordered for an establishment suffering from excessive illness, or even an increase of the share paid by the employer. Such measures, if permitted by the by-laws of the fund, may be taken directly by the executive powers of the fund, subject, of course, to an appeal to the supervising insurance authorities. By similar provision under the British act, claim for losses sustained through excessive illness may be made, not only against employers, in case of unsanitary working conditions, but against local authorities, in case of bad housing conditions, bad water supply, etc., and detailed provisions are outlined as to the proper procedure for ascertaining the amount of loss sustained, and recovering such amount. The procedure, however, is cumbersome, semi-judicial, and not as likely to produce the desired results as the direct administrative procedure outlined by the German law.

It is evident from the entire discussion of the rates that there is no one definite economic or social theory underlying them; the

^{*} Schedule rating is grading of the insurance rate, downward or upward, in consideration of presence or absence of certain safety devices or conditions, or on the reverse, for the absence or presence of hazardous conditions. "Experience rating" is grading of the insurance rate with regard to the actual accident experience of an establishment.

theory of benefits to be derived, ability to pay, distribution of responsibility for the existing amount of illness, are all hopelessly mixed together. This is, however, just what is to be expected from an institution which, notwithstanding many evidences of human ingenuity, represents largely a historical growth. It is worth while to refer briefly to a very interesting and coherent basis for the proper apportionment of the sickness-insurance rates, which has been recently advanced by the well-known actuary and student of social insurance, Mr. Miles M. Dawson, in a private discussion with the writer.¹ Mr. Dawson finds the governing principle of a proper adjustment of the cost of sickness insurance (or perhaps of all branches of social insurance) in the social responsibility for the amount of illness. Not all of it can be traced to the industry or occupation; but a certain proportion can. It is just, argues Mr. Dawson, that the wage-worker be expected to pay for that part of illness which is normal and independent of occupational influences. That part of it, however, which is due to those influences should be borne by industry. In this way industry will not only bear an arbitrary proportion of the cost, too high in some cases and too low in others, but a share proportional to the hazard of disease. It may be difficult to apportion in each industry the amount of existing illness according to the responsibility, but a broad statistical rule may be established. The occupation with the lowest sickness rate may be accepted as the normal standard. The excess of the actual sickness rate over this normal may, with fair justice, be assigned to occupational causes. If, e.g., according to the data of the Leipzig sickness fund for 1887-1905, the average number of days of sickness per annum for salesmen, clerks, etc., from twenty-five to thirty-four years old is 3.68, and for excavators, construction workers, etc., rises to 12.03, then the difference of 8.35 (or 69.4 per cent) is due to occupational influences, and for the latter group the employer's contribution should constitute seven-tenths of the cost.

The principle seems to be sound. Since the average rate of sickness for this age group was ascertained to be about 7.79, the employer's share on the average would amount to some 53 per cent,

¹ Mr. Dawson's theory is stated here by his special permission.

and the wage-workers', 47 per cent. If all ages are roughly thrown together (the rate for the office employees is 4.92 days per annum, and for all trades 9.43), the division again appears to be about equal. An equal division of the cost between the employer and employee appears essentially just, but not as between one industry and another.

There are of course many practical difficulties in the way. What statistics shall be adopted as conclusive? Shall the basis be the average rate of an industry in which there may be a number of different occupations? The administrative problems of ascertaining the proper distribution may be complex. Nevertheless, there is an important element of truth in this suggestion, which will bear careful investigation in the future. It is, however, an entirely new suggestion, not as yet realized anywhere, and at this time it cannot claim its place in the brief list of definite standards.

Reserve funds.—If the theory of rate-making outlined here is adopted, the actual rates in different insurance-carriers will be subject to wide fluctuations, under the influence of differences climatic, sanitary, occupational, and in age distribution, and they will also depend upon the willingness of both employer and employee to extend the sphere of service beyond the minimum limits prescribed in the law. It is intended that the rates therefore be experimental, that the method of changing them be simple; under proper administrative control the danger of financial embarrassment and insolvency need not be serious. Further protection may be demanded by the law in the nature of a small reserve fund, without any intention of making it actuarially accurate and equal to amount of accumulated liabilities, for it is not at all necessary to increase the burdens of the working-man today, for the purpose of relieving him in the distant future through the problematic income of compound interest. A working reserve sufficient to offer a sense of security against the possible effect of a catastrophe or epidemic is all that is required. Such a reserve may be slowly built up by requiring a certain percentage of the annual income to be set aside until an amount commensurate with the size of the fund is accumulated. A reserve equal to the combined expenditures of two preceding years would appear sufficient.

Limitations as to rates.—In view of such latitude to be allowed to the funds, perhaps no further reference to the exact amounts of the rates need be made in the law. It is significant, however, that the German law establishes at least some maximum limits. Four and one-half per cent is the normal limit established, and increase beyond this limit up to 6 per cent is permitted only for the purpose of meeting the minimum benefits. A further increase beyond 6 per cent can take place only by concurrent decision of both employers and employees. A little reflection will show the necessity of such limits. Small carriers may have an excessive expense ratio or may be subject to violent fluctuations of sickness-insurance rates. Exaggerated local pride may prevent necessary consolidations of funds. The wage-workers are required in Germany to carry other burdens of social insurance besides sickness insurance. A reasonable limitation in the act will facilitate administrative control.

As a matter of fact, however, only in very few cases do these restrictions become necessary, because the actual cost is very much below these excessive limits. In communal sickness insurance, over one-half of the funds collected only $1\frac{1}{2}$ per cent, about one fourth from $1\frac{1}{2}$ to 2 per cent, and the remaining funds from 2 to 3 per cent. In local sickness-insurance funds and establishment funds, over one-half of the funds collect from 2 to 3 per cent, and about one-third from 3 to $4\frac{1}{2}$ per cent. The tendency has been all along toward a higher rate of contributions because of the increase in the cost of medical aid and the development of additional voluntary features, but in less than 1 per cent of the funds was it necessary to raise the contribution above $4\frac{1}{2}$ per cent. With the 3 per cent rate the working-man in Germany pays 2 per cent; with equitable distribution his share under the system as outlined above would not exceed 1 to $1\frac{1}{2}$ per cent of his wages—under a \$10.00 weekly wage, 10 or 15 cents a week; under a \$15.00 weekly wage, from 15 to 22 cents.

Estimates as to cost of sickness insurance.—The probable cost of the insurance system proposed here cannot be guessed offhand. If it were necessary to compute the actual rates for different trades and localities in advance, the problem would be still more difficult.

But in the face of all these statistical and actuarial difficulties, some estimate as to the probable cost, in its relation to the wage-earner's paying capacity, appears quite necessary, lest the program outlined appear as altogether extravagant and visionary, and be forthwith dismissed as such. With apologies for the crudeness of the methods used, an estimate of the cost is here undertaken. It will be remembered that the benefits have been divided into four large groups: sickness benefits, medical aid in the broadest sense, maternity benefits, and funeral benefits. A separate estimate as to the cost of each will be required.

An estimate as to sickness benefits is comparatively simple, because they depend entirely upon the average sickness rate, expressed in number of days per annum. For the entire German system, the average has risen in 30 years from less than 6 to more than 9. The increase was partly due to the extension of the minimum period of assistance from 13 to 26 weeks in 1903. The experience of 18 years (1888-1905) for the Leipzig fund indicates about 9 days per annum, but within recent years it has risen, being 10.4 days in 1912 and 11.3 days in 1913. The experience of the Manchester Unity indicates (if illness for 26 weeks be included) a rate of 0.838 weeks or 5.9 days at the age of twenty; rising with age until at fifty-five it amounts to 1.634 weeks or 11.3 days. The average for the age group twenty to fifty-five is about 7.4 days. This is a male table, subject to some selection and therefore rather too favorable for a universal compulsory scheme. An average of 10 days or 1.4 weeks therefore seems quite conservative and safe. At the rate of $66\frac{2}{3}$ per cent of the wages as a benefit, the cost of this benefit per annum will represent 0.9338 of one week's wages or, on a basis of 50 weeks' wages, 1.868 per cent of the annual earnings.

The system outlined here provides a weekly benefit, akin to the sickness benefit, in case of childbirth, to the wage-working woman, such benefit to extend for some definite period, say 8-12 weeks. The "rate of issue" varies with the age of the married woman; with the age of the husband; with the duration of the marriage; in this country, as in most others, with the number of previous children. Disregarding all these refinements, however, it equals, according to the data of the British actuaries, about 15 per 100 wives. The

weekly sick benefit in each case would be (within the limits of 8–12 weeks) from 5.36 to 8.04 weeks' wages.¹ If employed married women alone were to bear this cost, it would amount to from 1.6 per cent to 2.4 per cent.² Since, however, married women constitute only about 15 per cent of all the women gainfully employed (in manufacturing pursuits only 12 per cent, in trade and transportation less than 7 per cent), the cost of this benefit if distributed among all women would be only 15 per cent of the foregoing amount—only 0.24 per cent to 0.36 per cent of the annual earnings. If, as it should be, the cost be distributed among all insured, irrespective of sex, on the theory that most workmen either are married or expect to be, and that the slight actuarial injustice to the confirmed bachelor might easily be justified on social grounds as a tax, the cost becomes so small as to be hardly worth considering—from 0.048 to 0.072 per cent of the wages.

The funeral benefit is a flat charge irrespective of wages. It might be made a variable amount, proportionate to wages, but it scarcely seems necessary to do that simply for purposes of actuarial computation. The average mortality rate in this country is about 16 per 1,000. In absence of better data one may be excused for adopting for purposes of this crude computation the standard size of a family as 4.6 persons. The average rate of mortality per standard family, therefore, is 73.6 per 1,000. In 1900, according to the latest data available, there were 17,430,000 persons employed in personal service, trade, transportation, and manufactures. Of these, 13,520,000 were males, and only 7,455,000 were married men. Of the 3,910,000 women employed in the groups of occupations enumerated, 510,000 were married, but it is reasonable to assume that with comparatively few exceptions their husbands were also employed. Thus we have 7,455,000 complete families for 17,430,000 persons employed, or 42.8 per cent. In addition there were 516,000 widowers and 554,000 widows, altogether 1,070,000 widowed families, or 6.1 per cent. For every 1,000 persons gainfully employed we may assume, therefore, 428 standard families, with 4.6 persons per family, or 1,969 persons; 61 widowed families,

¹ $0.67 \times 8 = 5.36$; $0.67 \times 12 = 8.04$.

² $5.36 \times .15 \div 50 = 1.6\%$; $8.04 \times .15 \div 50 = 2.4\%$.

for which we may assume 3.6 persons per family, or 222 persons; and 511 persons without conjugal attachments; or a total of 2,702. The average mortality for these 2,702 persons will be 43.2, and the cost of the funerals will be $\$50.00 \times 43.2 = \$2,160$ or \$2.16 per insured person. Four cents a week should therefore provide the cost of a modest funeral for death in the family. Eight cents will furnish double that amount—\$100.00. Again to remain ultra conservative, let us assume an annual wage of only \$500.00. The cost of a \$50.00 funeral benefit will therefore amount to 0.432 per cent of the wages.

The cost of the comprehensive system of effective medical aid is perhaps the most uncertain factor in the computation. We have no satisfactory data either as to the amount of skilled medical aid required nor as to the cost of such skilled aid at present, and we are especially in the dark as to the possible cheapening of the cost to be expected from effective organization. Nevertheless, some approach to this problem may be permitted.

The Leipzig sickness-insurance fund has as liberal a system of medical and institutional aid as any fund in Germany. On the whole, the standards of medical aid as outlined in the preceding instalment of this study are not essentially superior to those obtained in the Leipzig fund. We recognize the possible differences in cost per unit of service. Nevertheless, waiving these differences for the present, the relation between medical and other benefits is worth considering.

The average cost of insurance per member was M. 41.73, or \$9.93, per annum. In view of the difference in wages, however, a direct comparison is impossible. The maternity benefits probably cost a proportionately greater amount because of the large female membership (about 33 per cent) and the consequent large number of births—56 per 1,000 of the female membership, or 19 per 1,000 members. The cost of funerals may appear low because of the small funeral benefit (only about \$9.25 per case). A comparison between medical benefits and sickness benefits may nevertheless be made. The proportion of medical aid to sickness benefits is M. 17.58 to M. 18.88 or 93.5 per cent. Since the cost of sickness insurance has been determined at 1.868 per cent of the wages, the

cost of medical aid would amount to 1.746 per cent of the wages. However, an important correction must be made in this calculation. The German sickness benefit is based upon a 50 per cent scale; we have assumed a two-thirds scale of benefits. Had we assumed a 50 per cent scale, the cost would not be 1.868 per cent, but three-fourths of it, or 1.40 per cent, and in proportion to this the medical benefit would only be 1.309 per cent.

TABLE IV
DISTRIBUTION OF EXPENDITURES OF THE LEIPZIG SICKNESS INSURANCE FUND.
ANNUAL AVERAGES FOR 1909-13

	Amount Marks	Per Cent of Total Expenditure	Expense Per Capita* Marks
Medical aid—			
Treatment by physicians.....	1,730,254	21.5	8.97
Drugs and supplies.....	885,138	11.0	4.59
Hospital care, etc.....	774,481	9.6	4.02
Total medical aid.....	3,389,873	42.1	17.58
Sickness benefits to members.....	2,288,720	40.9	17.06
Sickness benefits to dependents...	185,913	2.3	.96
Reimbursements to third party for sickness benefits paid.....	152,958	1.9	.79
	3,627,591	45.1	18.81
Maternity benefits.....	160,606	2.0	.83
Funeral benefits.....	174,365	2.2	.90
Administrative expenses.....	696,059	8.6	3.61
	8,048,494	100.0	41.73

* 192,809 members.

The assumption that in proper proportion to wages medical aid would not cost more in America than in Germany may be easily criticized. It is intended only as a rough approximation. Of course, the experience of thirty years has given Germany an efficient organization which results in a low cost per unit of service. But on the other hand, the higher basis of American wages permits of a much higher rate of compensation per case within the same proportion of cost to wages. The average cost of simple medical aid per member in Leipzig was about one-half of the combined cost of medical aid, drugs, and hospital care. In actual amounts

it was some M. 9 per annum or about \$2.15. If the computation made above be accepted, the cost of simple medical aid in the United States would be 0.65 per cent of \$500.00 to \$600.00, or from \$3.25 to \$4.00. There are thousands of physicians who are ready to furnish the necessary medical aid under contract for less than that.

The cost of the sickness-insurance system as a percentage of wages, as here computed, appears as follows:

Money benefits.....	1.868 Per Cent
Maternity benefits	0.072
Funeral benefits.....	0.432
Medical aid	1.309
	<hr/>
	3.681

At least 10 per cent of this amount must be added for administrative expenses, thus bringing the total up to over 4 per cent of the wages. In all the computations the intention was to overestimate rather than underestimate. Still it seems very probable that the total cost will approximate 4 per cent on an average, and in a good many localities or industries will rise even higher. It is doubtful whether anywhere it will be below 3 per cent. The law might reasonably state the limits between 3 and 5 per cent. If a fund should desire to reduce the total contributions below 3 per cent, it might well be required to give evidence satisfactory to an actuary that it does not face the danger of bankruptcy. On the other hand, an increase of the contributions beyond 5 per cent would seem to call for careful investigation as to causes.

The actuarial computation made above may well raise two questions: Is it worth while? Is it feasible? The discussion of these questions may be somewhat beyond the scope of this chapter, but their importance may justify a brief deviation.

Assuming that most wages fall between \$500.00 and \$1,000.00 a year, 4 per cent of that will amount to from \$20.00 to \$40.00 per annum. The sum is not inconsiderable. For the twenty-odd million wage-workers of the United States, it will represent the staggering amount of perhaps \$600,000,000.00 per annum. But it is not all an additional charge. No one knows how much the American working class pays at present for sickness benefits, medical

aid, and for funeral insurance together. We do know, however, that for the last, and least important aspect of the entire problem, funeral insurance, over \$200,000,000.00 annually is paid to industrial insurance companies. In the investigation made some twelve years ago by the United States Bureau of Labor, it was ascertained that the expenses for sickness and death (exclusive of sickness benefits) amounted to \$26.78 per family. If, therefore, \$30.00 per annum on an average can grant all the benefits which have been outlined in a previous chapter, the answer seems to be that it is decidedly worth while.

But is this scheme feasible? Does it permit of universal application? If the cost of insurance, as here computed to vary between 3 and 5 per cent, were to be levied in its entirety on the wage-workers, it would produce in most working-men's families a disturbance of their economic equilibrium such as would force them to look at this comprehensive structure of social legislation as a sheer expression of governmental tyranny. A study of the available statistical data has led the writer to the conclusion that the economic evolution of the last twelve years has resulted in a reduction of the real wages in the United States by some 10 per cent.¹ That was a slow process and did not result in anything more threatening than grumbling. The opposition to a definite slash of several per cent at one stroke would be such that no political party anxious to remain in power would be likely to stand ready to face the music. Thus entirely irrespective of any claims to justice in apportionment, the distribution of the cost between the employer and employee, with a substantial contribution from the state, is the only way in which this large program may be realized.

I. M. RUBINOW

NEW YORK CITY

¹ See "Recent Trend of Real Wages," *American Economic Review*, December, 1914, p. 793.